

TMDL IMPLEMENTATION PLAN

SAINT MARY'S RIVER BASIN

Overview of Spanish Creek Watershed Plan

The Spanish Creek watershed (HUC10 #0307020403) is located in the Saint Mary's River basin in Southeast Georgia's Charlton County near Folkston. The local governments involved in improving the Spanish Creek watershed are the cities of Folkston and Homeland and the Charlton County Commission. Also involved in the effort are the Southeast Georgia Regional Development Center (SEGa RDC) in Waycross and the Georgia Department of Natural Resources' Environmental Protection Division (GADNR-EPD).

Having been determined to be an impaired water body by the State of Georgia, Spanish Creek from Long Branch to the St. Mary's River in Charlton County is classified as *partially supporting* its designation as fishing water. The Total Maximum Daily Load (TMDL) Implementation Plan for the Spanish Creek watershed is a collaborative effort of the GADNR-EPD and the SEGa RDC. A TMDL is the calculation of the maximum amount of a particular pollutant that a water body, river, or stream can receive and still be safe, healthy, and meet Georgia water quality standards.

According to the Spanish Creek Watershed Total Maximum Daily Load (TMDL) Implementation Plan, the water body suffers from two forms of impairments, Fecal Coliform (FC) and Dissolved Oxygen (DO). To meet current water quality standards, the TMDL Implementation Plan notes that a 90% reduction in nonpoint source fecal loads is necessary in the Spanish Creek watershed. To address the DO in Spanish Creek, the TMDL Implementation Plan suggests a 15% reduction in urban runoff resulting in a decrease of total organic carbon, total nitrogen, and total phosphorus.

Sources of Fecal Coliform in Spanish Creek

The fecal coliform (FC) in the Spanish Creek watershed can be attributed to both point and nonpoint sources. There are two permitted NPDES discharges of FC into Spanish Creek; they are the Folkston Water Pollution Control Plant (NPDES GA0037613) and the Folkston Pond (NPDES GA0027189).

As for the nonpoint sources of FC, pets and organic materials from spray fields deposits fecal matter on the land that is later transported to the water source via rainfall run-off. Further nonpoint sources of FC are leaking septic systems and urban development. Fecal Coliform bacteria from urban areas may originate from various sources including unchecked runoff through storm water sewers, unlawful discharges of sanitary waste, and runoff from improper disposal of waste materials. In addition, overflowing sanitary sewers and leaking collection lines as a secondary source of FC in the watershed.

Contributors to Impaired Dissolved Oxygen in Spanish Creek

There are numerous nonpoint sources of oxygen demanding substances in the Spanish Creek watershed. These sources include surface storm runoff of chemicals and fertilizers from residential areas as well as silviculture operations. Also, leaking and overflowing septic systems, unchecked runoff from development sites, organic material from lawns and city/county maintenance operations, pet excrement, and laundry and automotive care products are all contributing to the DO impairment in Spanish Creek.

In addition to the aforementioned sources, many Southeast Georgia streams, including Spanish Creek, are slow-flowing, "blackwater" bodies. The dark water coloration is due to adjacent wetland areas having organically rich bottom sediments that flow to the stream, as well as leaf litterfall. These factors also have an effect on DO.

As for point sources, the permitted discharges, as well as leaks, from the Folkston Water Pollution Control Plant (NPDES GA0037613) and the Folkston Pond (NPDES GA0027189) contribute to the dissolved oxygen.

Developing the Plan and Stakeholder Involvement

The SEGaRDC has worked closely with GADNR-EPD to develop the TMDL Implementation Plan for the Spanish Creek watershed. Each agency has been diligent in making sure that the strategy includes an action plan, education/outreach activities, stakeholders, pollutant sources, and potential

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funding resources. Stakeholders, including local government officials, landowners, industrial representatives and interest groups, have played a vital role in the plan's preparation. In fact, needed input was received during a meeting on October 7, 2002, with the St. Marys River Management Committee. This diverse group is comprised of both public and private sector representatives whose main concern is saving the St. Mary's River. Stakeholders offer valuable information and data regarding their community and the impaired water bodies and can provide insight and/or implement management measures.

Monitoring Plan

The monitoring plan will determine the effectiveness of the target TMDL and the management measures being implemented to meet water quality standards. Water quality testing is scheduled to begin in 2003. A voluntary septic system inspection program to encourage routine maintenance of septic systems is proposed to begin in December 2005.

Management Practices

The Implementation Plan lists management measures that have been or will be implemented to achieve water quality standards and the load reductions established in the TMDL. The management measures, including regulatory or voluntary actions or other controls by governments or individuals, specifically apply to the Fecal Coliform and Dissolved Oxygen in the Spanish Creek watershed. The following management practices are included in the TMDL Implementation Plan:

- Septic tank management
- Pet excrement disposal and management program
- Automotive product care disposal and management program
- Lawn and garden poison care disposal and management care program
- Household cleaner care disposal and management program
- Sewer management program
- Spill/discharge control and cleanup program

Projected Attainment Date

The projected date to attain and maintain water quality standards in the Spanish Creek watershed is 2012, which is within 10 years of the acceptance of the TMDL Implementation Plan by the Environmental Protection Division.

Conclusion

TMDL Implementation Plans are platforms for establishing a course of actions to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies.

Through this intergovernmental partnership and the collaboration with the private stakeholders, the Spanish Creek watershed TMDL Implementation Plan is sure to succeed.

STATE OF GEORGIA TMDL IMPLEMENTATION PLAN WATERSHED APPROACH SAINT MARY'S RIVER BASIN

Local Watershed Governments

SOUTHEAST GEORGIA RDC

Charlton County

City of Homeland

City of Folkston

TMDL Implementation Plans are platforms for establishing a course of action to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies. **With input from appropriate stakeholder groups, a TMDL Implementation Plan has been developed for a cluster of impaired waterbodies and the corresponding pollutants.** The impaired streams are located in the same sub-basin identified by a HUC10 code (Figure 1).

This Implementation Plan addresses an action plan, education/outreach activities, stakeholders, pollutant sources, and potential funding resources affecting the sub-basin. In addition, the Plan describes (a) regulatory and voluntary practices/control actions (*management measures*) to reduce target pollutants, (b) milestone schedules to show the development of the management measures (*measurable milestones*), (c) a monitoring plan to determine the efficiency of the management measures and measurable milestones, and (d) criteria to determine whether substantial progress is being made towards reducing pollutants in impaired waterbodies. The overall goal of the Plan is to define a set of actions that will help achieve water quality standards in the state of Georgia. Following this section is information regarding individual impaired streams.

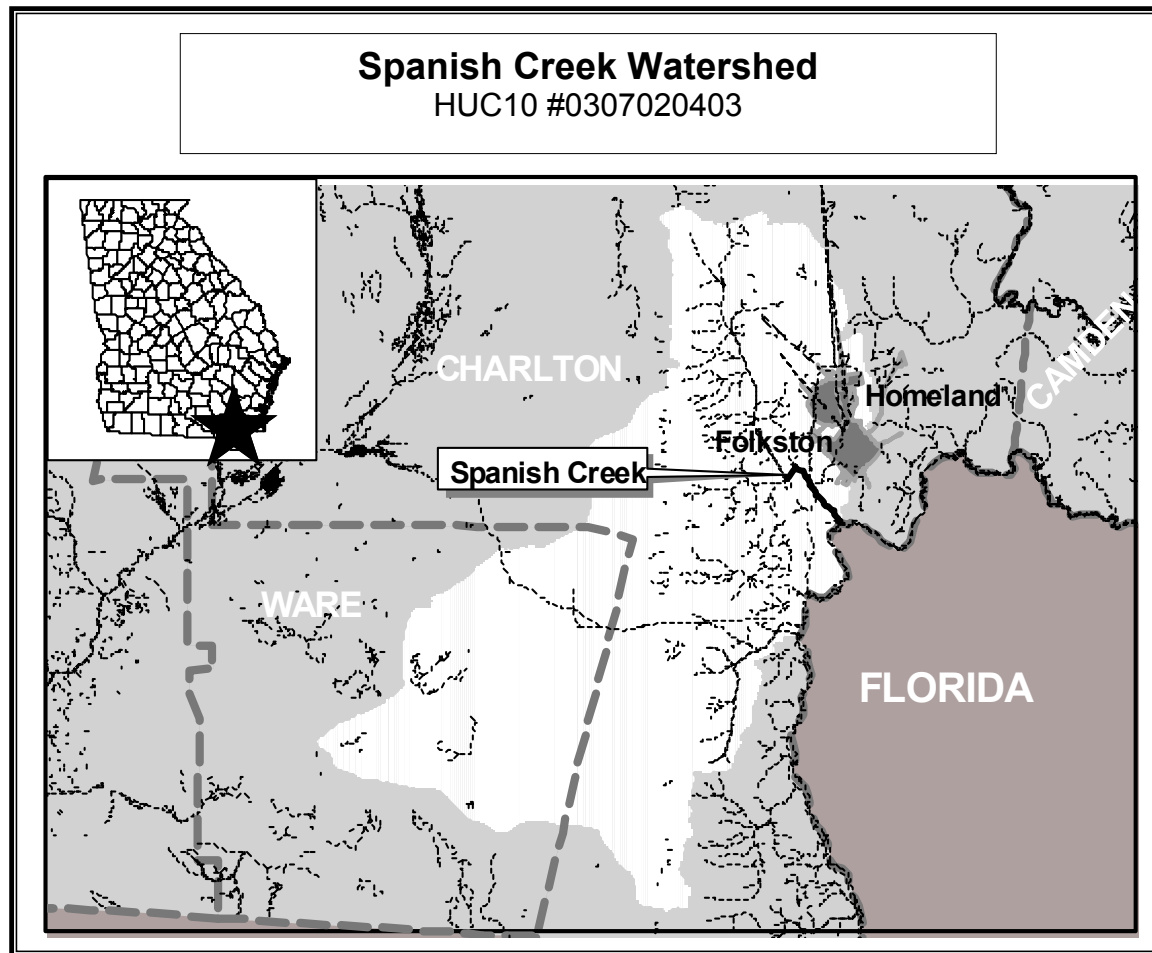


Figure 1

Impaired Waterbody*	Impaired Stream Location	Impairment
1. Spanish Creek	Long Branch to Saint Mary's River	Fecal Coliform (FC) Dissolved Oxygen (DO)

*These Waterbody Numbers are referenced throughout the Implementation Plan.

POLLUTANT:	SOURCE:	EFFECT:	WHAT CAN I DO?	
			At Home: Community, School	At Work: Business, Government
<input checked="" type="checkbox"/> Dissolved Oxygen (DO)	<input checked="" type="checkbox"/> Industrial	<input checked="" type="checkbox"/> Habitat	Septic Tank Management: a. Prevent soil contamination. b. Prevent waste runoff. c. Routine and regular maintenance of septic system. Pet Excrement Disposal: a. Properly dispose of pet excrement. Automotive Care: a. Regular maintenance, check for leaks and the proper disposal of fluids at approved locations. Lawn and Garden Care: a. Proper yard maintenance. b. Proper disposal of organic and non-organic yard by-products. c. Proper precautions and correct usage of chemical and fertilizers. Household Cleaners: a. Proper disposal of household chemicals. b. Correct usage of chemicals. Sewer management: a. Routine visual inspections and report leaks if noted. Spill/Discharge Control and Cleanup: a. Control and cleanup spills according to instruction of manufacturer. Miscellaneous Product Care: a. Control and cleanup spills according to instruction of manufacturer. Trash Pickup: a. Visually inspect containers and report damage or leaks. b. Keep container secure at all times. c. Ensure that trash is picked up on a regular schedule.	Automotive Care: a. Regular maintenance of fleet vehicles, check for leaks and the proper disposal of fluids at approved locations. Lawn and Garden Care: Ensure that contracted lawn services adhere to: a. Proper yard maintenance. b. Proper disposal of organic and non-organic yard by-products. c. Proper precautions and correct usage of chemical and fertilizers. Commercial Chemical Cleaners: a. Proper disposal of commercial chemicals. b. Correct usage of chemicals. c. Inform all employees of MDSS. Sewer management: a. Routine visual inspections and report leaks if noted. Spill/Discharge Control and Cleanup: a. Control and cleanup spills according to instruction of manufacturer. Miscellaneous Product Care: a. Control and cleanup spills according to construction of manufacturer. Trash Pickup: a. Visually inspect containers and report damage or leaks. b. Keep container secure at all times. c. Ensure that trash is picked up on a regular schedule. Forestry: Best Management Practices (BMPs) a. Streamside Management Zones (SMZS) b. Road building-Prevents soil erosion
<input checked="" type="checkbox"/> Fecal Coliform (FC)	<input checked="" type="checkbox"/> Urban	<input checked="" type="checkbox"/> Recreation		
<input type="checkbox"/> Sediment	<input type="checkbox"/> Agriculture	<input checked="" type="checkbox"/> Drinking Water		
<input type="checkbox"/> Metals	<input checked="" type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Aesthetics		
<input type="checkbox"/> Fish Consumption Guidelines (FCG)	<input checked="" type="checkbox"/> Residential	<input type="checkbox"/> Other (Please List)		
<input type="checkbox"/> Other (Please List)	<input checked="" type="checkbox"/> Other (Please List)			
	(1) City of Folkston's spray field located approximately 500 meters NE of Spanish Creek.			

INFORMATION/EDUCATION/OUTREACH ACTIVITIES

An education/outreach component will be used to enhance public understanding of and participation in implementing the TMDL Implementation Plan.

List of all previous and planned information/education/outreach activities.

Responsible Organization Or Entity	Description	Impacted Waterbodies*	Target Audience	Anticipated Dates (MM/YY)
Southeast Georgia Regional Development Center, Fred Carpenter	Ordinance/Regulation Review for the City of Folkston, Homeland and Charlton County	1	Local Governments	Ongoing
EPD Coastal District, Frank VanArsdale	Best Management Practices (BMPs) for Industry	1	Business Community	Ongoing
EPD Coastal District, Frank VanArsdale	BMPs for Water Quality	1	Business Community	Ongoing
Georgia Forestry Commission, Stan Moore	BMPs for Forestry	1	Forestry Industry/Private Land Owner	Ongoing
NRCS, 7 Rivers RC&D, Luther Jones	BMPs for Agricultural	1	Agricultural Industry	Ongoing
University of Georgia Extension Agent, Terry Thigpen	BMPs for Agricultural	1	Agricultural Industry	12/2003
Southeast Georgia Regional Development Center (RDC), Coastal District DNR/EPD	Southeast Georgia RDC is assisting local governments with a Water Committee. The Committee has been operational for 9 months. One project that the committee would like to undertake is educational videotape for Residential and Urban BMPs. The committee believes that the key to quality water is behavior modification through education. This will be collaborative effort between DNR/EPD, Southeast Georgia RDC, Water Committee and Local Governments.	1	Local Governments and Citizens	12/2004

Saint Mary's Watershed Committee, George Varn	Organization to Protect the Saint Marys River Basin.	1	Individuals, local governments representatives and state governments.	Ongoing
Southeast Georgia Regional Development Center, Fred Carpenter	Comprehensive Plan Update. Will assist local government in addressing Land Use Issues and growth in Charlton County.	1	Local Governments and Citizens Action Committees	12/2003-06/2004
Adopt-A-Stream, Dr. Joe Richardson	Will assist Dr. Joe Richardson in the introduction of the Adopt-A-Stream program into Charlton County. Dr. Joe Richardson is a Marine Biology Professor at Armstrong State College.	1	Citizens	03/2003
Southeast Georgia Regional Development Center, Fred Carpenter	Southeast Georgia RDC will, with the assistance of Julie Vann, Coastal Conservation Resources, and NRCS, seek funds to assist Charlton County in the development of Storm Water Pollution Prevention Plan (SWPPP)	1	Local Government	1/2003

STAKEHOLDERS

EPD encourages public involvement and the active participation of stakeholders in the process of improving water quality. Stakeholders can provide valuable information and data regarding their community and the impaired water bodies and can provide insight and/or implement management measures.

List of local governments, agricultural organizations or significant landholders, commercial forestry organizations, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

Name/Organization	Address	City	State	Zip	Phone	E-Mail
George W. Varn, Jr. Turpentine & Cattle Company	P.O. Box 4488	Jacksonville	FL	32201	904-910-2653	N/A
Dean Woehrle, St. Mary's River Management Committee	P.O. Box 5007	Callahan	FL	32011	904-910-2531	N/A
Dixie M. McGurn, Mayor City of Folkston	103 North First St.	Folkston	GA	31537	912-496-2563	N/A
Theron Aldridge, Public Works Supervisor, City of Folkston	103 North First St.	Folkston	GA	31537	912-496-2563	N/A
Austin Hickox, Mayor, City of Homeland	607 PA Ave.	Homeland	GA	31537	912-496-7332	N/A
Jerry Daulbaugh, Water Dept. Superintendent City of Homeland	607 PA Ave.	Homeland	GA	31537	912-496-7332	N/A
Jessie Smith, Chairman, Charlton County	100 S. Third St.	Folkston	GA	31537	912-496-2549	N/A
Steve Nance, County Admin. Charlton County	100 S. Third St.	Folkston	GA	31537	912-496-2549	N/A
Dr. Joe Richardson, Marine Sciences Program, Savannah State	P.O. Box 20583	Savannah	GA	31404	912-356-2809	Richards@savstate.edu
Stan Moore, Georgia Forestry Commission	2764 E. Baker Hwy	Douglas	GA		912-389-4045	smoore@GFC.STATE.GA.US
Gowen Timber Co. Inc.	108 Okefenokee Dr.	Folkston	GA	31537	912-462-2571	N/A
Toledo Manufacturing Co.	109 N. Third	Folkston	GA	31537	912-462-2571	N/A
International Paper	3131 Brown Dr.	Waycross	GA	31503	912-283-2717	N/A
Trish Gramajo, Land Protection Coordinator, The Nature Conservancy	45 W. Bay St., Suite 202	Jacksonville	FLA	32202	904-598-0004	www.nature.org
Bill Wikoff, International Paper	6508 New Jesup Highway	Brunswick	GA	31523	912-265-1378	Bill.wikoff@ipaper.com
Fredrick E. Carpenter, Southeast Georgia RDC	1725 South Georgia Parkway, West	Waycross	GA	31503	912-285-6097	fecsegardc@accessatc.net

Watershed: Spanish Creek
 HU10: #0307020403

WATER BODIES/STREAMS COVERED IN THIS PLAN

These impaired streams are located in the same sub-basin identified by a HUC10 code. Most of the information contained in this section comes from the 303(d) list and has been completed by employees of the EPD Water Protection Branch. Data that placed the streams on the 303(d) list will be provided upon request.

Waterbody Name #1	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
Spanish Creek	Long Branch to Saint Mary's River	4 miles	Fishing	PS
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Charlton	NA	NA	Urban Runoff (UR)	
Pollutants	Water Quality Standards	Required Load Reduction	TMDL ID	Date TMDL Established
FC	1,000 per 100 ml (geometric mean Nov-April) and 200 per 100 ml (geometric mean May-Oct)	90%		July 2001
Contributing to DO	DO: 5 mg/L (daily)-4 mg/L (minimum) Natural Water Quality Standard DO: 4.598mg/L (minimum)	UR: 15% TOC, TN, TP		December 2001

TOC=Total Organic Carbon (lb/yr), TN=Total Nitrogen (lb/yr), TP=Total Phosphorus (lb/yr)

POLLUTANT SOURCES

It is important to recognize the potential source(s) causing water quality impairment. Each source must be controlled to comply with target TMDL/Load Allocations for each pollutant. Included is a description of how the sources contribute to the impairment and the waterbody that is impaired. List of major nonpoint source categories and sub-categories or individual sources (Urban Runoff, Agriculture, Forestry, Municipal Sewage Treatment Plant)

Pollutant	Sources of Pollutants	Description of Contribution To Impairment	Impacted Waterbodies*
Fecal Coliform/ Dissolved Oxygen	Folkston Water Pollution Control Plant (NPDES GA0037613)	Wastewater Discharge and Leaks	1
Fecal Coliform/ Dissolved Oxygen	Folkston Pond (NPDES GA0027189)	Wastewater Discharge and Leaks	1
Fecal Coliform/ Dissolved Oxygen	Leaking Septic Systems	Effluent leakage due to malfunctioning sewage systems and leaking collection lines.	1
Dissolved Oxygen	Urban Development	Unchecked runoff through storm water sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials	1
Dissolved Oxygen	Land Disturbing Activities	Unchecked runoff from developing/developed sites: (1) Discharges of sanitary waste, (2) Improper disposal of waste materials and (3) Introduction of sediments into waterways. (Sediments change the mechanics of the waterway by reducing flow rates)	1
Fecal Coliform/Dissolved Oxygen	Pet Excrement	Pet excrement is deposited on the ground in residential, urban and rural areas. During routine lawn maintenance (watering) or during periods of precipitation the excrement is washed away into nearby drainage system and/or waterways.	1
Dissolved Oxygen	Organic Materials From Lawns, City and County maintenance operation and Silvicultural Operations	Yard trimmings, leaves, branches and chipping materials that are not properly secured or disposed are washed away into nearby drainage systems and/or waterways.	1

Pollutant	Sources of Pollutants	Description of Contribution To Impairment	Impacted Waterbodies*
Dissolved Oxygen	Parking Areas and Roads: Residential, Cities of Folkston and Homeland	Automobile fluids leaking onto hard or soft surfaces are not properly treated and disposed of. During routine maintenance of surface (cleansing) or precipitation these substances are washed away into nearby drainage systems and/or waterways.	1
Dissolved Oxygen	Laundry Care Products	Detergents are emptied into the septic system, unto ground, or deposited into unapproved drainage/septic systems. During periods of precipitation these chemicals are washed away into nearby drainage systems and/or waterways.	1
Dissolved Oxygen/ Fecal Coliform	Spill/Discharge of Raw Sewage	Spillage and unauthorized discharges that are not properly contained and/or decontaminated correctly are left on surface(s) to be washed away during periods of precipitation or routine maintenance (washing) of vehicles or other collection apparatuses or containers.	1
Dissolved Oxygen	Improper Methods of Trash Collection and Disposal	Spillage and incorrect disposal techniques place substances on surfaces to be washed into drainage system or waterway during precipitation or routine maintenance of vehicles or other collection apparatuses.	1
Dissolved Oxygen	Automotive Product Care	Fluids, materials associated with auto repairs and chemical absorbent materials that are not properly disposed of are placed on surfaces to be washed into drainage system or dumped illegal into drainage systems.	1
Dissolved Oxygen	Chemical/Fertilizer Applications, Residential and Silvicultural applications of chemical by aerial and/or broadcast means	Residential Chemical/Fertilizer (Nitrates and Phosphates) runoff increases the natural eutrophication rates in streams and creeks, and contributes to impaired DO by producing a carbonaceous chemical reacting with O^2 .	1
Dissolved Oxygen	Lateral Leaf Litter	Leaves from floodplains are introduced into waterway when flooding occurs. Decrease in Oxygen due to decomposition of organic materials.	1

Pollutant	Sources of Pollutants	Description of Contribution To Impairment	Impacted Waterbodies*
Dissolved Oxygen	Wetlands	Wetland areas often contribute to high organic (leaf litterfall, decomposing plants) loading, slow flows (due to minimum topographic relief) and elevated temperatures in a surface water system that results in conditions where the dissolved oxygen is naturally lower and cannot meet the criteria without reductions in the natural nutrient and carbon loads. Usually reduction in natural forest or wetlands contributions is not feasible, practicable or desirable through conventional best management practices.	1
Dissolved Oxygen	Direct Leaf Litter	Leaves are introduced into the waterway by falling from overhanging branches, limbs and trees.	1
Dissolved Oxygen	Manufacturing/Industrial Effluent Discharges	Runoff from thermal discharges raise the temperature of the water lowering its oxygen content.	1
Dissolved Oxygen	Forested Woodlands and Terrain	Heavily forest and wetland often contribute to high organic (leaf litterfall, decomposing plants) loading and slow flows (due to minimum topographical relief) in a surface water system that result in conditions where the dissolved oxygen is naturally lower and cannot meet the numeric criteria without reductions in the natural nutrient and carbon loads. Usually reduction in natural forest or wetlands contributions is not feasible, practicable or desirable through conventional best management practices.	1
Dissolved Oxygen	Storm Water Runoff	Storm water runoff is part of a natural hydrologic process. However, human activities, particularly urbanization and associated industrial activities, can alter natural drainage patterns and add pollutants to rivers, and streams. Impact is a decline in fish and restrictions on swimming.	1

MANAGEMENT MEASURES, MEASURABLE MILESTONES AND SCHEDULE

(i.e. Local codes and ordinances, Erosion and Sedimentation Control, Storm Water Management, Local water resource monitoring)

The following table lists management measures that have been or will be implemented to achieve water quality standards and the load reductions established in the TMDL. The management measures, including regulatory or voluntary actions or other controls by governments or individuals, specifically apply to the pollutant and the waterbody for which the TMDL was written. A description is provided of how these management measures are/will be accomplished through reliable and effective delivery mechanisms, and how these management measures are/will help achieve the target TMDL. Included is the source of the pollutant, anticipated/past effectiveness of the management measure (very effective, somewhat effective, not effective), the current status (i.e. enforced, in-progress, planning), and measurable milestones and schedule. Milestones are used to measure progress in attaining water quality standards and to determine whether management measures are being implemented.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
NPDES Permit	Georgia EPD	City of Folkston Water Pollution Control Plant	Modified: June 2002	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
FC & DO		1	Within 18 months of final TMDL, EPD will modify those permits that need to include TMDL limits.

Measurable Milestones	Schedule		Comments
	Start	End	
Refer to Permit GA0037613	06/03/02	03/04/06	N/A

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
NPDES Permit GA0027189	Georgia EPD	City of Folkston Pond	Reissued: June 2002	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
FC & DO		1	Within 18 months of final TMDL, EPD will modify those permits that need to include TMDL limits.

Measurable Milestones	Schedule		Comments
	Start	End	
Refer to Permit GA0027189	06/03/02	06/02/07	N/A

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Georgia Water Quality Control Act Georgia Groundwater Use Act Georgia Erosion & Sedimentation Act Georgia Comprehensive Planning Act Georgia River Basin Management Planning Act Georgia Storm Water Permitting Program Georgia Zero Tolerance Policy Georgia River Basin Permitting Strategy	Georgia DNR EPD	Laws authorizing Georgia EPD to control water pollution, eliminate phosphate detergents and regulate sludge disposal; to require permits for agricultural ground and surface water withdrawals; to prohibit siltation of state waters by land disturbing activities and require undisturbed buffers along state waters; to require land-use plans that include controls to protect drinking water supply sources and wetlands; to require river basin management plans on a rotation schedule for all major river basins; to require storm water discharge permits for certain industrial activities, construction sites and municipal storm sewer systems; to require enforcement actions for all sanitary sewer system spills/effluent limit violations from wastewater facilities; to review and permit all dischargers with TMDL evaluations and new waste load allocations.	11/64	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Ungoverned point source discharge and nonpoint source runoff pollution loads.	1	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Compliance with regulations to control water pollution including identification and implementation of Best Management Practices	11/64	Continuous	N/A

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Septic Tank Management	Individual	Routine septic system maintenance prevents soil contamination, waste runoff and improves soil and water quality.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal Coliform Dissolved Oxygen	Untreated effluent from malfunctioning septic system	1	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen and Fecal Coliform in the impacted waterway.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Pet Excrement Disposal and Management Program	Individual	Encourages individuals to correctly dispose of pet excrement.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal Coliform Dissolved Oxygen	Pet Excrement	1	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen and Fecal Coliform in the impacted waterway.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Power Equipment, Commercial, Industrial, and Personal, Product Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of materials that are related to the repair and routine maintenance of automobiles.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen	Car washes, mechanical repair and maintenance shops, and individual home auto maintenance and/or repair.	1	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterway.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Lawn and Garden Poison Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of Lawn and Garden chemicals.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen	Lawn & Garden Herbicides and Pesticides.	1	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterway.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Household Cleaner Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of household chemicals.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen	Household Chemicals	1	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterway.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Sewer Management Program	Individual	Encourages individuals to routinely inspect sewage system on property.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Leaking Sewage Lines	1	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen and Fecal Coliform in the impacted waterway.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Spill/Discharge Control and Cleanup Program	Individual	Encourages individuals to cleanup, control and/or to report spills.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Surface Spills or Uncontrolled Discharges	1	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen and Fecal Coliform in the impacted waterway.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Stream Management Zones	GFC	Encourages Forest Production Operator to Plan and Implement strategies to prevent sediments, fluids and nutrients from entering waterway.	12/1993	In-Progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen	Fluids, excessive nutrients and organic materials	1	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	12/1993	Continuous	GFC must provide educational opportunities if BMP is to remain effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
BMP Monitoring	GFC	Within watershed will conduct monthly aerial BMP evaluations to identify recent forestry practices and conduct BMP audit	01/2003	Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen	Silviculture Activities	1	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	01/2003	Continuous	N/A

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Nutrient Management Program for Home Owners and Silvicultural Operations	NRCS (7 Rivers RC7D), GFC, and University of Georgia Extension Service	Encourages and educates users of fertilizers on the correct usage and amount needed to maintain high yield and to lessen the impacts of nitrates and phosphates to waterways. Reduces NPS of pollution.	1991	In-progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen	Nature and manmade fertilizers	1	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	1991	Continuous	NRCS, GFC, and University of Georgia Extension Agent must provide educational opportunities if BMP is to remain effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Storm Water Pollution Prevention Plan (SWPPP)	Southeast Georgia RDC, Coastal Conservation Resources, and NRCS	Storm water runoff is part of a natural hydrologic process. However, human activities, particularly urbanization and associated industrial activities, can alter natural drainage patterns and add pollutants to rivers, and streams. Impact is a decline in fish and restrictions on swimming	06/2003	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen/Fecal Coliform	Storm Water Run Off	1	Effective if BMP is implemented

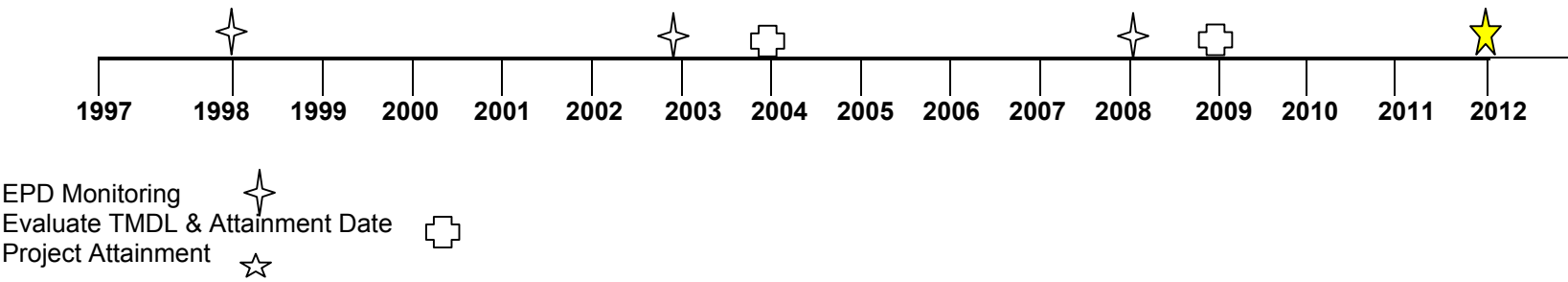
Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen and Fecal Coliform loading in the impacted waterways.	06/2003	Continuous	Southeast Georgia RDC will, with the assistance of Coastal Conservation Resources, and NRCS, seek funds to assist Charlton County in the development of Storm Water Pollution Prevention Plan (SWPPP)

POTENTIAL FUNDING SOURCES The identification and discussion of dedicated funding is important in determining the economic feasibility of the above-mentioned management measures.

Funding Source	Responsible Authority	Status	Anticipated Funding Amount	Impacted Waterbodies*
Section 319 (h) of the Clean Water Act	EPA/State of Georgia	Must Apply	N/A	1
Greenspace Funds	Georgia Department of Natural Resources	Must Apply	N/A	1
Small Business Technical Assistance Program	Georgia Department of Natural Resources (EPD)	Must Request Assistance	Undetermined-Free Technical Assistance	1
Environmental Quality Incentive Program (EQIP)	NRCS	Must Apply	N/A	1
Unified Watershed Assessment program	NRCS	Must Apply	N/A	1
Conservation Reserve Enhancement Plan	NRCS	Must Apply	N/A	1
Section 604(b) Grants	Georgia Department of Natural Resources	Must Apply	N/A	1

PROJECTED ATTAINMENT DATE

The projected date to attain and maintain water quality standards in this watershed is 10 years from acceptance of the TMDL Implementation Plan by EPD.



MONITORING PLAN

The purpose of this monitoring plan is to determine the effectiveness of the target TMDL and the management measures being implemented to meet water quality standards. List of previous, current or planned/proposed sampling activities or other surveys. Monitoring data that placed stream on 303(d) list will be provided if requested.

Name Of Regulation / Ordinance Or Management Measure	Organization	Impacted Waterbodies*	Pollutants	Purpose/Description	Time Frame		Status (Previous, Current, Proposed)
					Start	End	
TMDL Evaluation	GA EPD/USGS	1	DO/FC	Monitoring data for Georgia 305(b)/303(d) List	1998	1998	Previous
Water Quality Testing	GA EPD	1	DO/FC	Assessment of water quality	2003	2003	Proposed
BMP Monitoring	GFC	1	DO/FC	Within watershed will conduct monthly aerial BMP evaluations to identify recent forestry practices and conduct BMP audit.	01/2003	Continuous	Current
Storm Water Pollution Prevention Plan	Southeast Georgia RDC, NRCS and Coastal Conservation Resources	1	DO/FC	Southeast Georgia RDC will, with the assistance of Coastal Conservation Resources and NRCS, seek funds to assist Charlton County, Folkston and Homeland in the Development of Storm Water Pollution Prevention Plan (SWPPP)	01/2003	01/2004	Proposed
Water Quality Monitoring	Adopt-A-Stream	1	DO/FC	Define parameters, provide record of collection data, assess effectiveness of TMDL Implementation Plan and provide documented annual visual assessment of waterbody. This effort will lead to a database that is based on significant historical data.	12/2004	Continuous	Proposed
Tire Program	Coastal District EPD	1	DO	Reduces illegal dumping of tires, provides opportunities for increased code enforcement, improves water quality.	12/2005	Continuous	Proposed

CRITERIA TO DETERMINE WHETHER SUBSTANTIAL PROGRESS IS BEING MADE

The following set of criteria will be used to determine whether any substantial progress is being made towards reducing pollutants in impaired waterbodies and attaining water quality standards. Discussion on each criteria is recorded in the space provided. Additional relevant criteria are presented in comments.

- Percent of concentration or load change (monitoring program) _____

If monitoring results show that it is unlikely that the TMDL will be adequate to meet water quality standards, revision of the TMDL may be necessary.

- Categorical change in classification of the stream (delisting the stream is the goal) _____

- Regulatory controls or activities installed (ordinances, laws) _____

- Best management practices installed (agricultural, forestry, urban) _____

COMMENTS

Watershed: Spanish Creek
HU10: #0307020403

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**Environmental Protection Division of the Department of Natural Resources,
State of Georgia.**

TOGETHER WE CAN MAKE A DIFFERENCE!

Department Use Only:

Implementation Plan	Impaired Waterbodies			
	1	2	3	4
Action Plan				
Education/Outreach Activities				
Stakeholders				
Pollutant Sources Identified				
Description of Management Measures				
Measurable Milestones and Schedule				
Potential Funding Sources				
Monitoring Plan				
Criteria To Determine Whether Substantial Progress Is Being Made				
Supporting Documents				